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Pepper Pike, OH 44124

FRACTIONAL CURRENCY COLLECTOR'S BOARD

February 1994 Newsletter

It's a New Year and that means that your \$10 Dues are now payable. The Due's year runs from January 1 through December 31 of each year!

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THE ENCLOSED DUES ENVELOPE IS THE ONLY DUES NOTICE YOU WILL RECEIVE !

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Treasurer Lee was not at the 1993 Memphis Show to collect from a few of you and as a result your 1993 Dues are past due and included in the envelope statement.

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FAIR WARNING - THIS IS YOUR LAST NEWSLETTER IF YOU DON'T RESPOND NOW...

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Dr. Lee is retiring from active practice (Not from the FCCB) and you will find his new address both on the dues envelope and attached membership list. Good Luck, Wally! He reports that our Treasury Balance as of 1/1/1994 was \$1037.08

Now on to more mundane matters:-

1) New member Byrge has uncovered a 5th Issue Walker with an Orange Seal (Not faded or oxidized) with a 5mm. Key. It has been assigned Number 5R25.1r and a description to be placed in your Encyclopedia is attached.

2) In the 1/7/1994 Currency Auctions of America Sale was lot 249. It turned out to be a variation of the 'O-63' Note listed as 2R10.5 and has been listed as 2R10.5a. It is currently listed as "Unique" until another surfaces. A description is attached for your use. Also included is a previously unknown Enveloped Postage additional listing from the 1/7/93 Currency Auction's of America Sale (Lot 182) to be added to your Enveloped Postage Catalog.

3) President Hales is now the proud owner of some early issues of the NUMISMATIST. The June, 1915 Issue had one of Dr. Valentines articles on Fractional. The article is attached for your interest and files! Remember that much of the information has changed since that time as other researchers added to and confirmed his work...

(continued on back)

(Continued from over)

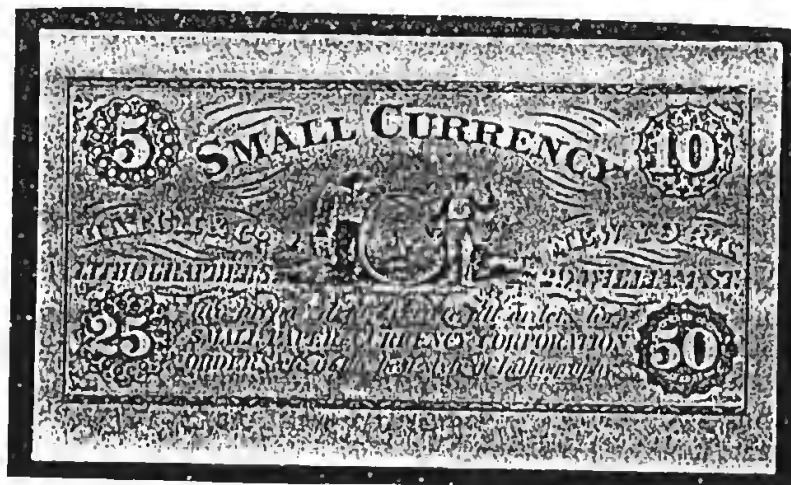
- 4) Attached is a copy of an article titled "Old Abe" from the December 1993 NUMISMATIST.
- 5) Get out your magnifiers and read the article on "Dry printing introduction created varieties" from the December 6, 1993 LINN'S STAMP NEWS. It is the same discussion of problems that apply to the dry printing of fractionals back in the 1860's...
- 6) In the November 1993 NEWSLETTER you received an article concerning Paper preservation in an answer to Member Ken Keller's inquiry. Ken has subsequently sent me a further article on Paper Preservation and an additional letter containing follow up material. It's informative...
- 7) Coin World of November 29, 1993 had an excellent article concerning the Engraver's Art. you will find it attached, also.
- 8) I have recently received a rash of questions and been involved in a series of discussions of the Fourth Issue Papers, Watermarks and numbers. One of my articles appeared in PAPER MONEY during 1965 that dealt precisely with this problem. Unfortunately, I can't locate a printed copy and can only find my manuscript copy. There are several border notes that you may find hard to read, but at least the heart of the matter is covered. My apologies for the quality of the original carbon copy...
- 8) and of course there is attached a current list of members - Hopefully all will send in their dues and our membership will stay at 139 active members!
- 9) We all seem to have pieces that are too large for the standard Mylar Archival Quality holders that are available. Member Carl Kanciruk located University Products, Inc., 517 Main Street, PO Box 101, Holyoke, MA 01041-101, who have large Mylar Envelopes. At the same time, I located Light Impressions, 439 Monroe Ave., Rochester, NY 14607, who have similar Archival items. A small section of their catalogs is attached for your reference. Both companies should be delighted to send you their catalog!...

Do enjoy the Memphis Paper Money Show and our annual meeting on Saturday June 18. My thoughts will be with you, even though the body won't!

W. H. Tuckey

TO BE ADDED TO YOUR CATALOG OF ENVELOPED POSTAGE

Catalog Number 42A
Paper WHITE
Ink YELLOW BACKGROUND WITH BLACK LETTERING
Commentary "SMALL CURRENCY/HATCH & Co. NEW YORK/LITHOGRAPHERS
29 WILLIAM ST/are prepared to execute all orders for/
SMALL PAPER CURRENCY CORPORATION/
ORDERS etc. of the best style of Lithography.
N.Y." ALL IN BLACK INK; "FIFTY" IN REVERSE IN YELLOW BACKGROUND.
"5", "10", "25" AND "50" IN THE CORNERS IN BLACK INK.
City NEW YORK
State (NY)
Numerical Value 50
Word Value
Value Message FIFTY
Flaps Printed NO
Pedigree LOT 182, 1/7/1994 CURRENCY AUCTIONS OF AMERICA SALE.

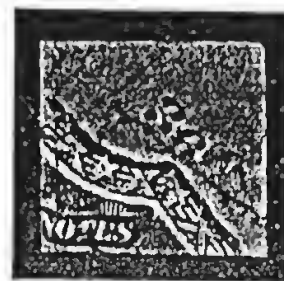


**TO BE ADDED TO YOUR
"ENCYCLOPEDIA OF POSTAL AND FRACTIONAL CURRENCY"
LISTINGS**

5R25.1r. Walker. FACE: Black, signatures: printed John Allison, printed F.E. Spinner, orange seal, key length: 5mm. BACK: Green. PAPER: Cream white bond with minute pink fibers and long lilac fibers distributed throughout, also localized blue fibers on right end of face. Waterproofing (sizing) compound applied to both surfaces of note. RARITY: Unique.



2R10.5a. O-36. FACE: Black, bronze oval. BACK: Dark green, bronze "10" and O-36. PAPER: Yellowish white bond. RARITY: UNIQUE. SPECIAL NOTES: Numeral error of "36" instead of normal "63". 1/7/1994 Currency Auctions of America Sale Lot 249, Price Realized \$2,860.



Enlarged View

THE NUMISMATIST

VOL. XXVIII.

JUNE, 1915

No. 6

Paper Fractional Money of the United States.

BY DR. D. W. VALENTINE.

[The following paper was read before the New York Numismatic Club on Feb. 12, 1915.]

Fractional currency is literally a part of the unit of exchange. It may be metallic, paper, or of other material. Locally it is usually applied to United States paper fractional money. Coins of denominations less than the unit are usually spoken of as "minor coins."

In Colonial times paper money was issued that included denominations of units, multiples of units, and fractions of unit of current value. Previous to the Civil War there had been numerous issues of paper fractional money issued by cities, banks, corporations, firms, and individuals. These were not authorized by Congress, and were commonly called "shin-plasters." I have endeavored to obtain the origin of the term, and will quote the definition taken from the Century Dictionary:

"1—A small square patch of brown paper usually saturated with vinegar, tar, tobacco juice, or the like applied by poor people to sores on the leg; U. S. hence humorously. 2—A small paper note used as money, a printed promise to pay a small sum, issued as money, without legal security. The name came into early use in the United States for notes issued on private responsibility in denominations of from 3 to 50 cents as substitutes for the small coins withdrawn from circulation during a suspension of specie payments. People were therefore obliged to accept them, although very few were ever redeemed. Such notes abounded during the financial panic of 1837 and during the early part of the Civil War 1861-65."

The Standard Dictionary gives a very similar definition though it includes the Colonial period as well as that of 1837 and the Civil War. Our fellow-member, Mr. D. Proskey, who has such a vast fund of numismatic lore, gave a definition as originating from "the fact that 'post boys' and riders on toll-roads used to carry the toll fees in the top of their hoot leg so the toll gatherer could collect with little delay." In my boyhood days of the early 70's I used to hear the term applied to the subject of this evening's paper, but it is evident that it originated long before the governmental issue of paper fractional money.

Minor coins had been issued by the government almost continuously from 1793 in denominations varying from one half cent to one half dollar, but during the first years of the Civil War the issue was small and the branch mint at New Orleans was closed. Besides, the fear of the people had caused them to hoard the coins, thereby creating a disappearance of the greatly needed medium of minor exchange. To meet this need there came an unauthorized private issue of tokens, promises to pay, store cards, etc., made of various metals, vulcanite, paper tickets, or checks good for bread, milk, meals, street car, or ferry passages, beer, admission to the theatres, etc. Postage stamps were also used, as issued, in metal frames with mica

fronts or in envelopes with the value of contents, as well as the name of the individual or concern issuing such, printed on the envelope. The government on July 17, 1862, prohibited the issue of such tokens or store cards, but realized the necessity of some medium to take the place of minor coins. It has been stated that the Treasurer, Mr. F. E. Spinner, obtained the idea of using postage stamps from Mrs. Spinner relating how she had had difficulty in making change while shopping in Washington, D. C., and overcame the trouble by giving some postage stamps she had with her. It is claimed that Mr. Spinner stuck postage stamps singly or in multiples on Treasury paper and used them for exchange, also making arrangements with the Post Office Department to exchange soiled stamps when presented, as this was not legal currency and was but a poor substitute for it, Mr. Spinner developed the idea and presented the same to Congress. An act was passed on July 17, 1862, authorizing the issue of such currency, which was called "Postage Currency." This issue, at least, might be classed with "siege money," as it really was a "necessity issue," caused by the disappearance from circulation of practically all of the minor coins.

In 1861 the Federal Government issued paper money in multiples known as "Demand Notes," but the work was done by New York Bank Note Companies, as the Treasury Department had no means of making the paper or printing the notes. The issue of postage stamps of this period was contracted for by the National Bank Note Company for the same reason, as contracts were given to the National Bank Note Company of New York for making the bed pieces and roll-plates, and printing the obverse of this issue of postage currency, which had as a centre design the reproduction of a postage stamp, or multiples of same. The American Bank Note Company of New York received a contract for furnishing the paper, making the bed pieces, rolls and plates and printing the reverse of the issue. It may be of interest to state that an essay was printed which designated the specimens as "postage stamps," but the same has no engraver's or maker's name upon it, hence it is impossible to state just what it is. It has been rumored that the contracts were given to the two different bank note companies to act as a check and prevent the surreptitious or fraudulent issue of money. But as the companies were practically one it would not reflect upon the companies but upon possible wrongdoing employee.

It has been most difficult to get positive information as to which variety of the first general issue was the first issued. From such facts as I have gathered I feel positive that the perforated edge came before the cut edge, and it has been stated that the specimens with the "A. B. N. Co." monogram preceded the ones without it. This claim was based by the statement that the bank note companies after the fulfillment of their contracts turned over the plates to the Government, and the Government then erased the monogram on the reverse and issued a few sheets, both perforated and cut edge varieties. I have considerable faith in the author of the statement, but regret that I have not as yet found corroboration; on the contrary, I find a letter from S. P. Chase to the President of the American Bank Note Company, dated May 23, 1863, which contained the following: "In my letter I had expressed the understanding that the dies, plates, etc., from which the United States notes were printed belonged to the Government, and their custody subject to the direction of the department. The reply of your predecessor introverted this position, etc." Also the extract from a letter from S. P. Chase to the President of the National Bank Note Company, dated May 28,

1864: "You are aware that I regard such ownership and custody as the right of the department under the former contracts with the two companies. As this was not conceded, etc." These extracts would indicate that the plates, etc., were not turned over to the department, but there may be other or later proof that they were.

The paper used seems to have been of two kinds only, plain paper, but of various shades. The inks were of two colors, but also of various shades. Plate numbers appear on the wide margin of the sheet. Some specimens show parts of letters or numbers of unknown meaning.

Some of the perforated specimens have had the edges trimmed either without intent to deceive or to imitate a scarcer variety with cut edges. Another word of warning to collectors, mutilated specimens exist with large perforations crudely done, and without doubt fraudulently done.

This issue is peculiar, as it is not really money, but a medium of exchange of postage stamps. It is "exchangeable for sums not less than five dollars and receivable for all dues less than five dollars." The only place that the word "cents" appears is on the base line of one stamp, though the numeral or numerals of the denomination appear on both the obverse and reverse, though the word "cents" does not appear by it. There is no "promise to pay" on any United States paper fractional money, so they are not notes.

This issue is not signed, as contemporaneous bills or later issues of the fractional currency, and no Treasury seal appears on this issue.

The issue commenced Aug. 21, 1862, and ended May 27, 1863, amounting to over \$20,000,000. Our fellow-member, Mr. G. H. Blake, found and loaned to me a copy of the report of S. M. Clark to the Superintendent of the Treasury, W. P. Fessenden, from which I will read a number of extracts and from which I have gathered proofs which compel me to revise my tabulations.

Extracts from "Report to The Secretary of the Treasury, W. P. Fessenden, from the First Division National Currency Bureau, by S. M. Clark, chief of the division, November, 1864":

Origin of the division. This division had its origin in an attempt to trim and separate Treasury notes by machinery. This work up to the Summer of 1862 had been executed by hand labor. The first paper issues of the Government made necessary by the existing Civil War were manufactured by the New York bank note companies, and sent to this department in sheets of four notes each. After they were received here the signatures of the proper officers were attached and they were trimmed and separated by hand labor with shears. Futility of Treasurer and Register to sign notes—Congress authorized employment of corps of assistants. (Statutes at large V 12 p 313.) Economy and better security to print signatures authorized. (Statutes at large V. 12 p. 346.) Following which, a facsimile of the seal adopted by the Treasury Department was designed, and the American Bank Note Company employed to make dies of same of three sizes. The demand for original dies was made and the American Bank Note Company refused to surrender them. The American and National Bank Note Companies of New York were practically one, a powerful monopoly. The production of the "postal currency," as it was then called, next engaged your predecessor's (Secretary Chase) attention. The price paid for it was largely disproportionate to the cost of the production. In his own language, though bearing no interest, it was the dearest loan."

Treasury Department, Bureau of Construction, Oct. 7, 1862.

Sir: I have the honor to report that I have matured the details for carrying out the Secretary's plan of supplying the place of the present postage currency, with a currency based on the issue of revenue stamps, as follows:

Upon the Secretary's suggestion that the size of all the denominations shall be the same as the present 10-cent postage currency.

The obverse of all denominations I would print in black and the reverse in four different colors, say, 50's, red; 25's, purple; 10's, green, and 5's, tan color. (Then follows the list of machinery and labor to print 16000 sheets daily). The engraving of the bed plates could all be done in the department.—I have a design prepared for the Secretary's inspection—have made arrangement for trimming, separating, and paper, cost of machinery, fixtures, etc., packing, cost of pressmen printing, 75 cts to \$1 per 100 sheets. Signed, etc., S. M. Clark, Chief Clerk Bureau of Construction.

The Secretary adopted the report on the 10th of October, 1862, and approved the design. This design was made larger than the postal currency, viz., 2 1/2 x 4 inches. I recommended the use of this size instead of the smaller size he had prescribed. P. 20 (following a report) "Upon this report he decided to adhere to the size originally prescribed by him, and the design be reduced by photography. It was unfortunate for the artistic merit. But it promoted economy—and the cost was less than one-fourth what the Postal Currency from the New York bank note companies had cost." (See Note 1).

A system (of checks upon production to prevent fraudulent issue) was prepared and submitted on Nov. 7th, 1862. The paper will be made in the basement paper room, delivered in quantities of even thousand sheets to the plate printing room in the attic, then deliver the paper to the pressmen in quantities of 500 sheets, charging them to the pressmen by name in a book prepared for the purpose with two-columns-ruled for crediting the return of printed sheets, one for "perfect", the other for "imperfect" sheets. Each pressman to be held strictly accountable for the sheets delivered to him, the charge to be cancelled only by the delivery in kind to the assistant superintendent, not by payment; i. e., nothing but membrane paper will cancel the charge. All sheets torn, spoiled, or otherwise spoiled to be returned—but to be entered in the "imperfect" column. The receipts and burnings to be recorded in book "Record of Imperfect Sheets." The Superintendent of Trimmers' Division will count and compare the sheets, sign receipt, record the quantity and amount received in a book "Record of Currency Received from the Plate Printer After Trimming;" if damaged a sheet was delivered to the surface printer the same as a "perfect" sheet, but placed on top of pile. Three days will be required for drying all surface printing. The Superintendent of the separating room receives them. Keeps a "stock package" of each denomination to exchange for "imperfect" sheets, to insure decimal delivery to the Treasurer and a simple check upon the packers. The 5 cents, 10 cents, 25 cents, to be put in packages of \$10, secured by a paper strap marked "\$10," and the 50 cents in packages of 320, each secured by a paper strap marked "\$20." Five of each of these packets aggregating 750, to be banded together by a strap marked "\$250." Four of these \$250 packages to be placed in neat paper box (6 in. long 5 1/4 in. wide and 3 3/4 in. high) and labelled on the top thus:

\$1000 Dollars United States Revenue Currency
\$200 in 5 cents
\$200 in 10 cents
\$200 in 25 cents
\$400 in 50 cents,

and in this condition to be delivered to the United States Treasurer in locked up wooden boxes, by a messenger, etc., etc. Signed S. M. Clark, Chief Clerk in charge.

Hon. S. P. Chase
Secretary of the Treasury.

The system remained under advisement for some time, and eventually was returned to me endorsed as follows without date to the endorsement. The within system of checks and balances is approved. The currency to be called "Fractional Currency" instead of "Revenue Currency." Signed S. P. Chase.

The paper upon which the issues of the Government were printed was a large item of expense, and I had frequently reported to the Secretary the

propriety and economy of manufacturing paper of a distinct character in the department. He was paying the New York bank note companies \$22.50 per thousand sheets for a paper inferior to that which I could buy in open market for \$12. He directed an advertisement inviting proposals from paper manufacturers for furnishing the department with paper; authorized me to make investigations and experiments to the manufacture of a distinctive paper in the building. We attempted to produce a paper evenly tinted in the fibre with a bright non-photographic tint which would not interfere with the engraving and could not be removed from the paper without destroying the fabric. All our efforts failed; we could introduce no suitable pigment which we could not chemically remove. In report on bids to supply paper, which evidently refers also or wholly to paper for bills as it alludes to "green tints," and green was not used except on 10c, second issue fractional, there is the first reference to "watermarks," "all of which are inferior and badly done—also the "silk threads" are mentioned. The most ingenious of the two is Mr. Haywood's straight threads in colors. (Most interesting though is the following) "But since his (Mr. Homan's) reports were rendered another bid has been received from Stuart Gwynn of Boston. This bid contains samples of most extraordinary character and excellence. The maker divulges to the department his process of manufacture, which is different from anything I have heretofore known and sound in principle. The paper possesses wonderful strength, is not permanently injured by soaking in hot or cold water, and the surface does not rough up by abrasion under the ordinary tests. It is too transparent for the green tint and from its nature cannot be more opaque. The green tint proves itself to be no security. The St. Louis counterfeit \$10 proves this, and the Treasurer's clerk tells me that among the bills coming to him to be split prior to burning he has found some with the green tint entirely gone. The samples No. 1 and 2 were not in the envelope; of the remainder I prefer No. 4, at \$16.00, but should prefer a lighter weight than the lightest one submitted, being 14-16-18 pounds. I think 10 pounds heavy and strong enough of the "vegetable membrane" paper. I think it can be printed dry. The "distinctive mark" submitted by Dr. Gwynn is ingenious and might be serviceable to the department in detecting counterfeits, but would be of little value to the public, as it injures the paper. Signed, S. M. Clark, Acting Engineer in charge.

I continued my experiments for the production of a distinctive paper—also to print dry. In an informal conversation with Mr. Chase, October, 1862, I alluded to my report just quoted and found he had never seen the report. After search it was discovered and read to him, when he immediately telegraphed Dr. Gwynn to come to Washington, and bring specimens of his paper with him. Dr. Gwynn came, and his visit resulted in a contract for the production of the paper in the Treasury building. (Extracts from contract with Stuart Gwynn of the City of New York). He (Dr. Gwynn) does hereby convey to the Treasury Department the exclusive right to manufacture and use or control the manufacture and use of the said membrane paper. It is further agreed and understood that a secret mark shall be placed in the web of the paper so that one copy or impression thereof shall be upon each note or stamp issued of such size and device as may be directed by the Secretary of the Treasury and that the paper shall be tinted of such color as may be desired without extra charge. Signed S. P. Chase, Stuart Wynn.

I soon found that Dr. Gwynn possessed great scientific acquirements. His first attention was given to tinting the fibre, but failed. In the course of his experiments he discovered a method of tinting non-photographically with a new and rare pigment, a fibre foreign to that used in the manufacture of paper, but which could be introduced into and mingled with it in such a manner that no re-agent known to chemistry nor any method that he could devise would remove its non-photographic property without at the same time removing the fibre itself. This was the origin of the so-called "spider legs" in the membrane paper, and which has been adopted as one of the distinctive characteristics of the national paper now made in the department.

The first membrane paper produced was unsatisfactory, as the peculiar process of making rendered it more liable to split than ordinary bank note paper. All bank note paper hitherto made would split more or less readily,

but this proved more liable to split than any others, so its use was therefore abandoned. (Note—This would show that the so-called split fibre series should be listed before the fibre paper of the second general issue.) Experiments were continued with ultimate success and a paper produced which would not dissolve in hot or cold water—would not split, which had an immovable non-photographic tint in its spider leg fibre, and took ink more readily, retained it longer, and wore better than any paper manufactured for currency in any country.

Dr. Gwynn was experimenting with dry printing, but was arrested under very strange proceedings of the officials; confined for thirty days, and unconditionally released. His disgust with such treatment caused him to have no further personal transactions with the department except through his expert and attorney. Mr. Clark continued experimenting, and Mr. Chase in a letter to a committee of Congress, dated June 3, 1864, stated that the "dry printing process was" operating simultaneously and in daily use producing dry printed impressions of unexcelled perfection and beauty. For amount printed to Oct. 1st, 1864, see Note 2.

These extracts show that several different kinds of paper were used; that wet printing and dry printing were both used; that great economies took place; that radical changes were made in the design of the second general issue, and a bronze surcharge is first used. I have been unable to obtain information as to the significance of the surcharge on the upper corner or corners of the reverse. The value of each denomination appears for the first time, though the specimens are still unsigned and without seals. They are, as the first issue, exchangeable for postage stamps, etc. Some (so-called) proofs of this issue were made on watermarked paper, being the first watermarked paper used for fractional currency. The entire issue was made at the department from Oct. 10, 1863, to Feb. 23, 1867, and amounted to over \$23,000,000.

S. M. Clark in his report states: "To protect that portion of the public which will not protect itself by the exercise of ordinary diligence in scrutinizing paper money, the only course in my judgment when a counterfeit gets into the channels of circulation is therefore to make a new issue and withdraw the latter from circulation."

Counterfeits of the second general issue were more numerous than those of the first issue and of much better workmanship; this and the increased demand for fractional currency necessitated the change of type and created two additional denominations, though one of these, the 15-cent denomination, was only made as an essay or proof (see Note 3); the other, the three-cent denomination, is the first and only one of such denomination in any issue and was only printed with green back. It is the only variety of this issue that has no signatures, though none has seals. The need of this denomination was eliminated by an act of Congress March 3, 1865, providing for the coinage of a 3-cent coin in nickel. An act of Congress May 17, 1866, providing for the coinage of the 6-cent coin in nickel prohibited the issue of any bill of denomination less than 10 cents. This general issue has two principal series, the first, known as green backs, includes all the denominations; the second series is known as red backs, the distinction being caused by the two colors used in printing the reverses. The second series does not include the 3-cent denomination nor the variety known as the 60-cent Spinner "new style" or "open back." These, the red backs, are the only specimens that have autographic signatures. Many specimens of different issues appear with signatures written across the obverse or reverse, and even above the regular signatures, but the only value they have when the signature is in a different location than that on the current specimen is that of an auto-

graph in addition to the market value of the regular specimen. The signatures of the present incumbents of office of Treasurer or Register in fractional currency is simply an autographic value. The 5-cent variety bears the portrait of S. M. Clark, erroneously stated by a tabulator to be that of Gideon M. Welles. There was no law regulating whose portrait should be used, but the assurance of Mr. Clark in so using his portrait stirred Congress into passing an act on April 7, 1866, prohibiting the portrait of any living person appearing on any notes or bonds. Before this act was passed the Bureau of Printing and Engraving had the essay of the before-mentioned 15-cent notes in preparation, but the act prohibited its issuance, hence it only appears in proof on separate obverse and reverse.

The red backs bear a number of different combinations of autographic signatures, and are made of different papers and with various surcharges. In fact it is the series of the greatest number of varieties. One reason for this being the fact that they were printed with blank spaces for the signatures, some specimens being extant now unsigned, and as the change in the officials of Register and Treasurer occurred the new officials would sign some of these varieties. F. E. Spinner was Treasurer from March 16, 1861, to June 30, 1875; J. C. New from June 30, 1875, to July 7, 1876. The Registers were S. B. Colby, from Aug. 11, 1864, to Sept. 21, 1867; N. L. Jeffries from Oct. 5, 1867, to March 23, 1869. W. S. Rosecrans in 1880. The names of the last two appear on some notes, though they were not officials until after the issuance was supposed to have ended. The 25-cent denomination has the portrait of William Pitt Fessenden, who was Secretary of the Treasury 1864-5. The second variety of the 50-cent denomination bears the portrait of F. E. Spinner.

Several kinds of paper were used, at least three—coarse fibre, sometimes called parchment; fine fibre, and plain paper. The coarse fibre is placed first, as the variety known as the 50-cent Justice red back appears only in coarse fibre with the surcharge on the corners of reverse "S-T-6-4," and the signatures are Colby and Spinner. Note: The "S" cannot indicate the month as the issue did not commence until December.

The inks are black on obverse and red on the reverse of one series and green on the reverse of other series. Surcharges also appear on the 10, 25, and 50-cent denominations. The surcharges noted are "S E 2-6-4," "A-2-6-5," and "M-2-6-6" on reverse corners and two solid bronze ovals appear on the obverse of the 50-cent denomination and on only the coarse fibre paper variety of the 25-cent green hack variety.

There also appear what might be classed as location marks on some varieties—the 5-cent denomination has a small letter "a"; the 10-cent denomination has a small numeral "1"; the 25-cent denomination has a small letter "a", and the 60-cent denomination has a small numeral "1" and a small letter "a", either combined or singly. These appear in the left side of specimen, either about half way down or near the left lower quarter corner. They have been incorrectly called "plate numbers," or "plate letters," but as they only appear on specimens on the left edge row of a sheet or top row of a sheet and the combination "1 a" always on the upper left corner specimen of a sheet they surely indicate the location of the specimen on the sheet. The emissions of the general issue seem to overlap, but no reason has been found for their so doing. This series was all done at the Bureau of Printing and Engraving. Beginning Dec. 5, 1864, and ended April 16, 1869, and amounting to over \$86,000,000.

With the fourth general issue we find further improvements. The Treasury seal is impressed on all varieties for the first time. The 10-cent note is the only one which mentions postage stamps. The work is more artistic and symbolic. The 10-cent denomination, known as the "19-cent Liberty," from the engraved bust of female figure. The 15-cent denomination, known as the "15-cent Columbia," from the engraved bust of female figure, also on obverse. The 25-cent denomination, known as the "25-cent Washington, fourth issue." The 50-cent denominations have three varieties, one having the portrait of Abraham Lincoln, another the portrait of E. M. Stanton, and the third having the portrait of Samuel Dexter. Plate numbers and letters appear on the last to indicate plate and location of bill on plate. Some of the work of this issue was done by the Bureau of Printing and Engraving; some by the American Bank Note Company, and some by the National Bank Note Company.

The paper was various kinds—plain, watermarked, fibre, minute, and coarse, and combinations of same. The inks were black for obverse engraving and red for seal. The reverse of entire series was green. The issue began July 14, 1869, and ceased Feb. 6, 1875, amounting to over \$166,000,000.

The fifth, and last, of the general issue was the simplest, and has the least number of varieties. The appropriation for issuing fractional paper money was about exhausted, and an act of Congress April 17, 1876, for the issue of fractional silver coins to redeem the outstanding fractional paper currency caused the end of its manufacture.

The three denominations have but six varieties. The 10-cent denomination, appearing with the Treasury seal in green and also in red ink, has the portrait of W. M. Meredith. The red seal has a long key in one variety and a short key in the other variety. The 25-cent denomination has the portrait of Robert Walker, and the difference in the size of key makes two varieties. The 50-cent denomination has the portrait of Wm. H. Crawford. They all have plate numbers and letters, as the Dexter of the former issue. The paper is a fibre watermarked paper. The ink, obverse, black engraving, with red or green seal and the reverse of all varieties in green ink. Some of the work was done by the Bureau of Printing and Engraving, some by the Columbian Bank Note Company of Washington, D. C., and some by Joseph B. Carpenter of Philadelphia.

The issue commenced Feb. 26, 1874, and ended Feb. 15, 1876, and amounted to nearly \$63,000,000. This makes a sum total of \$368,724,079.45 issued, and in 1886 \$15,000,000 was outstanding and it was stated by Mr. Russell H. Drowne at that time that only about \$1,000,000 could be accounted for as outstanding. The amount of fractional silver and base metal coinage as compared with the amount and number of specimens outstanding should cause collectors to awaken to the opportunity that will never present itself again. Over \$300,000,000 in minor silver coins, over 90,000,000 cents and half cents coined since 1857, to say nothing of that issued before, ought to cause you to realize how extremely scarce are some of the specimens of the subdivisions of which scarcity even many paper money collectors are ignorant.

The tabulation as arranged up to date shows the following divisions and sub-divisions. Divisions are what might be called types, or where the difference is distinctive, and most easily discernible, as perforated edge or cut edge of the first issue; differences in surcharges or of paper in second issue; difference in design, paper, or color of ink used as in third issue.

Subdivisions concern difference in paper, shade of ink, surcharges of each denomination, errors, insertion of letters or numbers on certain notes in sheet regularly occurring. Plate numbers are not included, though I have a list of all I have seen, nor are notes with signatures in improper places included.

	Divisions	Sub-divisions	Total
The 1st issue has	16	30	46
2nd "	21	38	59
3rd "	12	58	70
4th "	6	17	23
5th "	3	6	9
	58	149	207

NOTES.

	Fractional	Postage
1. Comparative cost of printing		
50 cent pieces per \$1000.	1.59	6.97
25 cent pieces per \$1000.	3.08	13.94
10 cent pieces per \$1000.	6.71	28.87
5 cent pieces per \$1000.	13.43	55.75
	24.81	105.53

making a saving on \$50,000 lot Treasury assortment of \$865.90. 400 times for first issue.

2. Second Issue to Oct. 1st, 1864.

	5 ct.	10 ct.	25 ct.	50 ct.
Membrane paper dry	11857	17098	58689	62300
Bank note paper dry	6500	9000	65000	4100
Bank note paper wet	96004	1249295	475846	573375
				12481.223

3. Having mentioned "proofs" twice, I must inquire what really are proofs. I think a "proof" must be an impression from the bed piece before hardening of same, or this, like coins, might be called a "trial piece" or "pattern" if the design be not accepted. Furthermore a "proof" is usually on a different paper than a first impression. A close-trimmed specimen printed on one side only I should be inclined to suspect as a defective sheet specimen.

Medal Issues and Awards.

At the Spring meeting of the Carnegie Hero Fund Commission at Pittsburgh, April 30, fifty-two acts of heroism in many parts of the country were recognized. In two cases gold medals, in fourteen cases silver medals, and in thirty-six cases bronze medals were awarded.

The Swedish-American World's Fair Committee, Panama-Pacific International Exposition, San Francisco, 1915, has struck a commemorative medal. The obverse represents "The Golden Port," the sun setting in the horizon, with inscription "Panama-Pacific International Exposition, San Francisco, 1915." On the reverse will be found "Pallas" (The goddess of wisdom) crowning Science and Labor, supporting United States and Sweden's official shields, with inscription "Arbetet Adlar," "Labor Ennobles."

J. DE L.

An Image of "Old Abe"

MANY COIN COLLECTORS know about "Peter the Eagle" (also called "Old Pete" or the "Mint Bird"), the mascot who lived and flew freely through the interior of the U.S. Mint in the early 1800s until he suffered an accidental death. Peter the Eagle was the model for some of our coins.

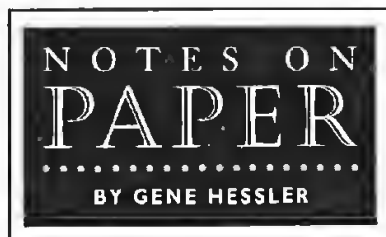
But some readers might not know about "Old Abe," who served as the model for the tiny eagle in an engraving by Charles Burt (1823-92) used on six denominations of paper money and bonds. The eagle on the shield in the vignette *Justice with Shield* obviously is based on a painting of Old Abe.

Old Abe served for three years as the mascot of Company "C" of the 8th Wisconsin Volunteer Infantry during the Civil War. In retirement he was supported by the State of Wisconsin and enjoyed a "career of public appearances, banquets, and practically everything except autograph parties," to quote historian Bruce Catton. This feathered soldier attended veterans' reunions and political conventions. However, Old Abe did not receive a military burial: like Peter the Eagle, he was stuffed and mounted.

Old Abe was born in Spring 1861 in northern Wisconsin, where he was captured by a Chippewa Indian, Chief Sky. The young bird initially was sold for a bushel of corn. Ownership changed hands a few times before he found his niche as mascot for Company "C."

Although it was against regulations, Old Abe often accompanied his regiment into battle. He whis-

tled, chuckled and whined, and each sound had a specific meaning. (The latter showed his displeasure for



poor or short rations.)

Retirement came in 1864, when this extraordinary eagle took up residence in the basement of the Wisconsin State Capitol. In 1868 he made an appearance at the Republican Convention, and in 1876 he delighted crowds at the Philadelphia Exposition. Old Abe died in 1881 in a fire in the Capitol basement.

The vignette *Justice with Shield* or *Justice with Scales*—the latter applies to the 50¢ third issue fractional currency note (H1586-1608a, cataloged in my book *Comprehensive Catalog of U.S. Paper Money*)—was engraved by Charles Burt during his employment with American Bank Note Company (ABNCo). This engraving was used on the \$50 (H945c), \$100 (H1140) and \$1,000 (H1401 and 1402) interest-bearing Treasury notes, and the \$100 (H1137-1139a) compound interest Treasury note, each authorized by the Act of March 3, 1863. All are rare today. Two government bonds for \$50 (HX141G) and \$10,000 (HX141F) authorized by the same Act also feature this engraving.

Although all these notes were counterfeited, the \$1,000 denomination has attracted the most interest.

The Bureau of the Public Debt has in its possession two examples of authentic notes, bearing serial numbers 999999 and 102997.

When Charles Burt engraved the tiny image of the eagle on the shield, he took some artistic liberties. Close examination of the painting of Old Abe finds him with a rather forlorn and pitiful expression. The artist chose not to show the bird "with warts and all." Even though his depiction of Old Abe is small in size, the engraver created a proud image worthy of his famous model. •



"Old Abe," portrayed by James Smillie (top), also was Charles Burt's model for the tiny eagle in the vignette *Justice with Scales* on a 50¢ third issue fractional currency note authorized by the Act of March 3, 1863.

Dry printing introduction created varieties

By Ken Lawrence

In the early 1950s, the Bureau of Engraving and Printing began experimenting with new methods of intaglio printing that had the potential to increase the productivity and quality of line-engraved U.S. stamps.

For nearly 40 years before then, the great majority of U.S. stamps had been printed on webbed rotary presses designed by Bureau engineer Benjamin R. Stickney. They were much more productive than the old sheetfed flatbed intaglio presses they replaced, but they also had limitations.

One factor that slowed production and reduced image quality was the need to dampen the paper to a moisture content of 15 percent to 30 percent before applying the ink. Part of the 1950s experimenting consisted of tests on several presses that could print line-engraved intaglio images on paper that required only 5 percent to 10 percent moisture content.

These included sheetfed presses of both flatplate and rotary design, webbed single-color rotary presses, and eventually a series of sheetfed three-color presses designed by the Giori organization in Europe.

BEP officials believed that if these experiments were successful, press productivity could triple, overall quality would improve, and for the

first time it would be possible to print registered multi-color intaglio stamps in a single press run.

By 1954 the machines were up and running. The first dry-printed stamp was the 8¢ red and blue Statue of Liberty definitive stamp, Scott 1041, issued April 9, 1954. It was printed by two different presses: one flatplate, the other rotary.

Because the rotary press plates were curved after they were engraved, the images are slightly taller than those printed from flat plates. The Scott *Specialized Catalogue of United States Stamps* now lists the flat and rotary plate numbers separately, but does not consider single stamps to be separate varieties.

Many specialists do differentiate them. It's easy to create a pair of measuring gauges from one of each type, just by cutting off the left or right edges so that the printed image of each can be used to measure an unknown stamp.

The next three dry-printed stamps were the \$2 Ringneck Ducks migratory waterfowl hunting permit stamp of 1954-55, Scott RW21; the 3¢ violet brown Lewis and Clark commemorative, Scott 1063; and the \$1 red violet and black Woodrow Wilson stamp in the Presidential series, Scott 832c.

The \$1 Presidential was

the first dry-printed stamp that had an earlier wet-printed counterpart, and the only one to have its own official first day of issue, Aug. 31, 1954. The original \$1 purple and black Presidential stamp, Scott 832, had been

the next 30 years.

It wasn't the first Huck-Cottrell stamp. That honor went to the 3¢ blue and red Red Cross commemorative of 1952; however, the earlier stamp had used the wet printing method. All subsequent



These 4¢ Abraham Lincoln coil stamps bore Chicago, Ill., precanceled overprints. The wet-printed version, at the left, is of particular interest to specialists, because the variety exists only in precanceled form, overprinted for use in 17 cities. The dry-printed stamp on the right is less essential, as it is commonly available in unprecanceled condition.

issued 16 years earlier, on Aug. 29, 1938.

The two varieties can be differentiated easily by the difference in color between the purple of the wet printing and the red violet of the dry printing.

The 3¢ Lewis and Clark commemorative represented a leap into the future, because it was BEP's first dry printing on the experimental webbed Huck intaglio press, the prototype for the Cottrell presses that became the Bureau's flagship equipment for

Huck and Cottrell stamps were dry printed.

Affirming the success of those trials, dry printing became the new production standard with the appearance of the 2¢ red Thomas Jefferson sheet stamp in the Liberty series, Scott 1033, issued Sept. 15, 1954. In a mere five months, dry printing had gone from being a novel curiosity to being the preferred system.

On Sept. 29, 1954, a dry-printed version of the 6¢ brown Canal Zone airmail

stamp, Scott C22a, appeared. It was the only Bureau issue printed from the very same plates (flat plates) as the earlier wet-printed edition, Scott C22.

After that, things became more complicated. Until enough new presses could be acquired, most stamps still had to be wet printed. Even after nearly all single-color sheet stamp production had been moved to Huck and Cottrell presses, coil stamps continued to be printed on Stickney presses.

Thus, quite a few Liberty series stamps exist in both wet- and dry-printed versions. Scott lists them all, but the numbering is inconsistent. Sometimes the first version is given the main listing, while for other stamps the later version gets the main number and the original gets the small letter suffix.

When a particular design has been printed by both processes, the wet-printed edition is the version on thinner paper that appears to be tinted overall in the ink color. Mint examples appear translucent from the gum side. Dry-printed counterparts have thicker, whiter, more opaque paper and gum, higher sheen and more pronounced relief of the printed image.

Sheet stamps include the 1/2¢ Benjamin Franklin, Scott 1030 and 1030a; 1¢ George Washington, Scott 1031 and

1031b; 3¢ Statue of Liberty, Scott 1035 and 1035c; 4¢ Abraham Lincoln, Scott 1036 and 1036c; 6¢ Theodore Roosevelt, Scott 1039 and 1039a; 30¢ Robert E. Lee, Scott 1049 and 1049a; 40¢ John Marshall, Scott 1050 and 1050a; 50¢ Susan B. Anthony, Scott 1051 and 1051a; and \$1 Patrick Henry, Scott 1052 and 1052a.

Only one Liberty series booklet pane exists in both versions, the 3¢ Statue of Liberty, Scott 1035a and 1035c.

Coils include the 1¢ Washington, Scott 1054 and 1054c; the 2¢ Jefferson, Scott 1055 and 1055d; the 3¢ Liberty, Scott 1057 and 1057c; and the 4¢ Lincoln, Scott 1058 and 1058b.

The final stamp on that list, the wet-printed 4¢ Lincoln coil, is of special interest to specialists, because it exists only as a Bureau precanceled with the overprints of 17 cities. Now that more collectors than ever before are becoming specialists in modern U.S. stamps, this is becoming expensive and difficult to find.

The photograph shows two Chicago, Ill., 4¢ Lincoln precancels, with the wet-printed version on the left, and the dry-printed on the right.

Continuing its outmoded policy on precancels, Scott prices the wet-printed coil only in used condition, val-

ued at 50¢, and gives no price for a pair or line pair. That isn't any help to specialists who desire each variety in mint, full-gum condition. Specialists who otherwise care nothing for precancels need this stamp, and Scott provides them no guidance.

Besides these Liberty series stamps, a number of airmail, postage due, special handling, and revenue issues

exist in wet and dry printings of the same designs. Specialists regard each one as a distinct collectible variety.

This is the second of a series of articles about the collecting of specialized modern U.S. stamps. The first article appeared in Linn's Oct. 4 issue and detailed the detection of perforation varieties on modern issues. ■

Many factors can lead to paper degradation

Paper collectibles can often require special attention

Until now, I have confined most of my columns to discussing the care and conservation of coinage and paper notes issued as "regular" currency. Scrip and other forms of expedient currency, such as German notgeld, open up a whole new set of conservation problems.

The following letter expresses some of the concerns and problems that I am sure are shared by other scrip collectors:

"I have a small collection of sutler scrip and am interested in finding a safe way of preserving them. The sutlers, or peddlers, of the Civil War were hard pressed to conduct their business of selling wares to the soldiers due to the shortage of coins (caused by hoarding). They therefore issued their own currency in the form of metal tokens, cardboard scrip, and paper scrip. The sutler also extended credit to the soldier by means of paymaster orders, which were promissory notes due on pay day. The metal tokens in my collection have survived much better than the paper items due to their composition. Some, but not all, of the paper items have deteriorated quite noticeably. I keep the paper items in Mylar D currency holders. Do you think this is sufficient?

K. Keller
Ohio

Mr. Keller's letter underlines one of the main problems with scrip or any other form of expedient currency. These monies were made from whatever paper or metal was available at the time and were never meant to "last." It is very difficult for me to discuss the degradation of scrip or other emergency monies in general terms because of the potentially broad range of materials that can be used to produce them.

When I first read Mr. Keller's letter, I assumed that the paper scrip had not fared well because it was made of poor-quality acidic paper. This is not necessarily the case. I asked Hillel Kaslove, Curator of the National Currency Collection of the Bank of Canada, what sort of paper was used to produce Civil War sutler scrip. Mr. Kaslove said that for the most part, sutler scrip would have been printed on either standard cheque or bank note stock paper. Both of these papers generally would have been of good quality.

Until the 19th century, Western paper was made from either cotton or linen rags. Unfortunately, the demand for clean rags always surpassed the supply. In the early part of that century, paper makers experimented with a wide variety of materials, including bark and straw, in the hopes of coming up with a cheaper alternative.

Eventually, they discovered that paper made from ground wood was the alternative they were looking for. Groundwood paper was a major breakthrough freeing paper makers from their dependence on linen and cotton rags. Unfortunately, groundwood paper tends to be of poor quality with little long-term strength and durability. This is due to the pulping method which produces extremely short paper fibers (the shorter the fiber, the weaker the paper tends to be) while retaining large amounts of lignin.

Lignin is the binding material that holds the wood fibers together in the tree. Lignin



Saving money.

By Susan L. Maltby

breaks down easily to form acidic compounds which attack the paper and cause it to degrade. Newsprint is an example of groundwood paper. Even if it begins life white and strong, it quickly turns brown due to acidic degradation products and eventually crumbles away.

Although poor quality groundwood paper was being produced in Europe and, on a small scale in Canada in the 1840s, the first commercial groundwood pulp mill in the United States was established in Massachusetts in 1867. It is unlikely that much Civil War sutler scrip was being printed on groundwood paper.

Most likely, the Civil War Sutler scrip is in poor condition due to neglect and mistreatment prior to it being considered "collectible." Paper notes in general circulation tend to have a fairly short life span. It is for this reason that Canada replaced its one dollar bank note with a one dollar coin (affectionately referred to as a "Loonie.")

Back to the question at hand. Storing sutler scrip, or any other paper currency for that matter, in Mylar™ D is highly recommended. Mylar™, as regular readers will remember, is an inert material not subject to chemical breakdown. Mylar™ enclosures afford good protection and allow one to handle a fragile note without damaging it.

Paper scrip, like other money, should be protected from the light. In addition to fading, light can also cause photodegradation of the paper. Photodegradation breaks down the cellulose which is the main chemical component of paper. As cellulose breaks down, it produces acid byproducts which contribute to further degradation of the paper. In addition, shorter cellulose chains also make the paper weaker and more brittle.

Scrip and other forms of emergency currency are a fascinating and diverse topic. In the future, I would like to delve deeper into this area of numismatics. I would encourage any readers who are collectors, or have an interest in the materials collected, to send along any questions that you have. Please be as specific as you can about the composition of the materials.

In my March 23, 1992 column I described how readers can use the Abbey pH Pen to measure the approximate pH of storage envelopes. I recently received word from the suppliers of this product, Abbey Publication Inc., that they have moved. Their new address is: Ellen McCrady, Abbey Publications Inc., 7105 Geneva Drive, Austin, Texas 78723; (512) 929-3992.

Susan L. Maltby, Toronto, is a private conservation consultant. She has written and spoken about numismatic preservation and cleaning on a number of occasions.

January 11, 1990

Mr. Kenneth Keller
9090 Kinsman-Pymatuning Road
Kinsman, Ohio 44428
U.S.A.

Dear Mr. Keller:

I'm sure by now you have completely given up on me. Recently, I was going through my files and discovered your letter in which you asked about the technique used by the British Library to conserve badly degraded books and realized that I never followed up on your question.

I recently spoke with Helen Burgess, Senior Research Scientist at the Canadian Conservation Institute (CCI) in Ottawa, Canada about this technique. Helen is one of the leading experts on the effects, and effectiveness, of paper conservation treatments. She has carried out extensive research into treatments which deacidify and strengthen degraded paper.

Ms. Burgess said that the technique used by the British Library appears to be quite good and sound. Unfortunately, it is cloaked in a great deal of secrecy and none of the technical data from their research and experimentation has been shared with their scientific colleagues. Essentially the treatment entails grafting an acrylic polymer (which is inert and quite stable) directly to the cellulose in the paper with the aid of gamma radiation. This technique is basically knitting the paper back together at the molecular level by rejoining the cellulosic units which have broken apart due to the degradation of the paper. Apparently, the books are strengthened considerably after this treatment.

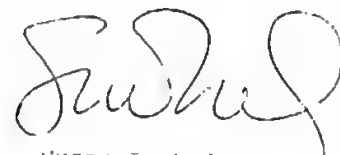
Unfortunately, this treatment is not available commercially. Apparently, there is a company in Ottawa which is involved in developing this treatment on a scale where it would be affordable and available to the general public. Like many ventures of this sort this service will most likely not be available for at least 5, or maybe even 10, years from now.

Ms. Burgess suggested that you try writing directly to the British Museum about this technique. She has been unable to get much information from them and would be curious to see if an inquiry from the general public would be any more fruitful.

In terms of using a treatment such as this for your Sutler Scrip I have some concerns. Basically, I would only advocate a treatment such as this as a final option. This sort of treatment is not reversible. Once the acrylic fibres are in the paper they are there for life. Do you think that collectors would like the way the paper feels after treated? I think you maybe better off keeping your scrip in Mylar[®] holders as you have been doing and giving them a good storage environment.

I hope this information is helpful. You may notice that I used part of your letter for my January column. If you have any further questions please do not hesitate to be in touch.

Sincerely,



Susan I. Malone

Engraving of paper money demands steely-eyed skill

Individually cut lines, dots provide shadows, contrast

By Michele Orzano
COIN WORLD Staff

The art of paper money engraving is just that, an art. Through a complex series of lines and dots — engraved backwards into pieces of polished steel — an engraver can change the expression on a face, the direction of a vehicle, or even the depth of a shadow.

The engraving discipline comes slowly, just as the work of an engraver progresses, according to Leonard E. Buckley, engraver-assistant foreman with the Bureau of Engraving and Printing in Washington, D.C.

Buckley should know. He's been practicing his craft at the BEP for 26 years. During his first six years he designed stamps and security documents for a variety of government customers. Now he spends his time supervising the 13 engravers — including two apprentice engravers and 11 journeymen; two of whom are women.

There are two types of engravers: letter engravers and picture engravers. Buckley describes letter engraving as "more of a discipline" because of the required knowledge of letter shapes and sizes while picture engraving relies more heavily on the engraver's artistic talents. The apprenticeship for a letter engraver is seven years while a picture engraver spends 10 years learning the trade.

He said potential engravers need to have patience to work slowly and precisely and with a great deal of concentration.

"We also look for a well-developed art talent because we don't teach them to draw," he said. "We take that training and transfer it to the art of engraving."

Dots and lines

Buckley said engravers must learn to sit very still and work on a piece of steel while looking at it under high magnification. They cut dots and lines — one at a time — in reverse or what engravers describe as "wrong reading." He said after a while engravers can read as well backwards as forwards. But that can have its drawbacks because there is always the chance that they become so involved in getting the form or shape of a letter just right that they forget a letter or a whole word in a legend.

He said each apprentice is assigned to work one-on-one with a journeyman, who instructs them in the actual physical tools of their trade, introduces them to the BEP archives of master dies and paper documents as well as the printing process itself. He said apprentices learn they don't work in isolation either, that each phase of the operation relies on the one before and after it.

"It doesn't do us any good to

make an image that is not reproducible," Buckley said. "It's a very disciplined art and craft even though there is new technology that comes along in the printing and processing area." Buckley said engravers "still use the same skills and tools from the 16th century." They learn that the cut line must not be broken nor ragged so as to provide the "linear integrity," Buckley said, that is necessary for security reasons.

Ideally, letter engravers work on a project first so if there is slip of their tools that leaves a dig or mark in the part of the steel where the portrait goes, the hours spent to produce a portrait aren't lost. Buckley said picture engravers spend more time creating the portrait or vignette than letter engravers typically spend on their tasks. Once the master dies are complete, printing plates are made.

Other paper items

In addition to paper money and stamps, the BEP's engraving department also provides engraving services to other government agencies. Certificates of naturalization, government financial documents and documents associated with presidential appointments such as cabinet positions are among the engravers' jobs.

Engravers also work on credentials and IDs for U.S. marshals, U.S. Immigration and Naturalization Service border patrol agents, U.S. armed forces personnel and others in federal service. Buckley said those documents "must look official" and so some of the same qualities found in U.S. paper money are incorporated into these documents, including some anti-counterfeiting devices.

And anti-counterfeiting devices are something the BEP is increasingly being made aware of as Congress and other critics point to the apparent ease with which counterfeiters around the world are duplicating U.S. paper money.

While it's not a subject Buckley will discuss in depth, he says the BEP recognizes the threat of counterfeiting efforts. He said the BEP's Advanced Counterfeit Detection division continuously gathers information about new technology, experiments with it and discusses those techniques with other countries.

"We're not standing still — we have to prepare designs to test new devices. We must test the elements to be sure they're balanced not only design-wise but technically," he said.

Buckley said the testing is necessary so the BEP knows "what our options are" because of the increase of computer technology and its accessibility to those who want to counterfeit U.S. paper money. Before any changes would be authorized by

the Secretary of the Treasury, suggestions from the Federal Reserve System, Secret Service and BEP officials would be considered.

No overnight change

"No nation does this [change designs] overnight. It's ongoing with them," he said. "Design changes here [other countries] are sometimes driven politically. And, they don't print the volume of notes the United States does."

Although Buckley said most people use products the BEP makes — stamps, U.S. paper money, and other documents — on a daily basis, most do so without giving them a second thought. But there's a comfort for him in that attitude.

"For people to take it for granted is a sign it's doing its job," he said. "There is still a demand in our society for the traditional, official."

All master dies, examples of their use or results of any experiments with new inks, papers or other surfaces are stored in the BEP's Historical Resource Center which provides security as well as archival care.


Buckley joined the BEP in 1967 after serving his seven-year apprenticeship at the American Bank Note Co. in New York. He began designing stamps, something he collected as a child.

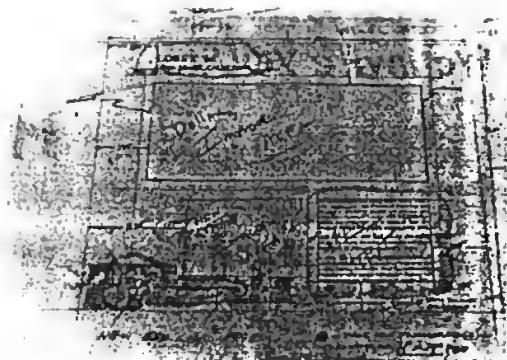
In the early 1970s Buckley said he enjoyed designing the eight-denomination Series 692 military payment certificates featuring native Americans and wildlife of North America. Those MPCs were used exclusively in Vietnam and are still popular with collectors.

Buckley said the stamp designs he most enjoyed creating were the series of four mineral stamps he designed in 1974. He said he drew on his initial excitement as a child buying foreign stamps which came in different sizes, shapes and colors. The designs for the large, diamond-shaped stamps — the first time that shape was used for a U.S. stamp — also proved popular.

"I worked with the Smithsonian's mineral collection," he said, recalling he hand-painted the designs at that time. Buckley said he's since been occupied with supervising and advising the engraving staff and hasn't had much opportunity to design.

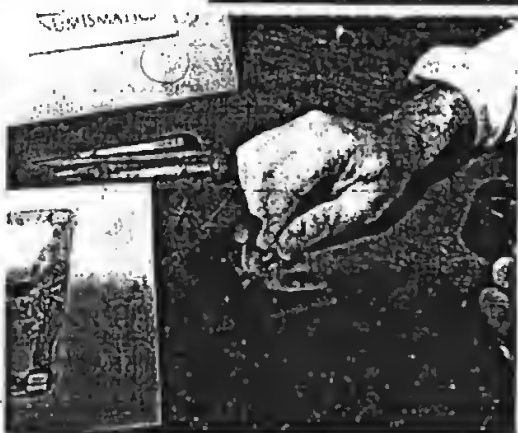
But in 1992 he did get a chance to design again — this time another series of stamps featuring minerals. But this time he used techniques not available 20 years before — he scanned in photos of the Smithsonian's collection and designed the stamps on a computer and then made color copies. In addition to taking advantage of the scanner and computer technology, designers still work with pen and ink, brush and paints, photographs or a combination of all.

He said while he enjoys working with government agencies, he believes "the American people are our real customers." 



DESIGN FOR a souvenir card specifies the lettering and pictorial requirements. The engravers would then produce the type and vignettes necessary to produce this item.

CONCENTRATION is an important element in the work of an engraver. Here BEP engraver Thomas Hipschen works on a detail he's cutting into a steel blank. (Photo courtesy of the BEP, Office of Public Affairs.)



INTRICATE CUTS form the basis for an engraving be it for paper money, stamps or other printed documents. The tools of the trade can be seen above the engraver's hand. (Photo courtesy of the BEP, Office of Public Affairs.)



SECURITY DEVICES are often an important part of any paper document produced by the BEP. Buckley designed these military payment certificates during the early 1970s. (MPCs courtesy of Fred Schwan.)

4TH ISSUE PAPERS

published in
"Paper money" 1965
mf

During the 2nd Session of the 43rd Congress, the committee on Banking and Currency of the House of Representatives conducted an investigation of the Bureau of Printing and Engraving.

The results of their investigation and the testimony given before the committee is printed in the documents of The House of Representatives as Serial #1659, Report #150 dated February 16, 1875.

Particularly interesting to the fractional currency collector is a detailing of the paper and printing of the 4th and 5th issues. In direct testimony by Geo. B. McCartee, Chief of the Bureau of Engraving and Printing; George S. Boutwell, former Secretary of the Treasury; Wm. A. Richardson, Secretary of the Treasury, J. M. Wellstood of the Columbian Bank Note Co.; and J. M. Wilcox, President of J. M. Wilcox & Co. (paper makers), the following factual data is revealed: (parenthetical notes are the writers).

Fourth Issue

The first notes were commenced in July, August and September 1869 on a paper having minute pink fibers distributed throughout the paper with a repetitive single lined watermark of the letters US (United States) over the entire sheet. On July 21, 1869 Secretary Boutwell issued notice that he had adopted a distinctive paper having "the introduction of colored silk, cotton, or other fibrous material in the body of the paper while in the process of manufacture as one of its peculiarities" and made it a felony for any person to have in his possession such paper similar to that adopted by the Secretary of the Treasury.

The use of the watermark proved to weaken the paper and was discontinued after a short time. However, the distributive pink fiber was never discontinued and the first counterfeits were detected by the Treasury Department because of the missing fibers.

J. M. Wilcox & Co. was the exclusive supplier of the paper used for the 4th and 5th issues and they further developed and patented a method for depositing a localized strip of blue-colored jute-fiber on one side of the sheet and along both edges of the sheet of paper in addition to the fibers distributed throughout the paper. This "localized fiber paper" was adopted and used exclusively after December 1871.

The notes of the 4th issue were printed by a combination of the American Bank Note Company and National Bank Note Company but the seal was printed and notes trimmed by the Bureau of Engraving and Printing.

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In 1871 the Treasury Department started a secret process of "sizing" and water-proofing of the paper. (The writer postulates that the first usage of this "sizing" is the cause of the "orange", "chocolate brown" and "purple brown" seals noted on certain notes and the "sizing" chemicals were then adjusted to prevent interaction with the ink used in printing the seal. Further the "pink face" notes were undoubtedly caused by contamination of the sizing material).

The testimony indicates that previously cataloged data describing sheet size and number of notes per sheet is incorrect. The testimony is as follows:

Note Value	Sheet Size	Subjects per sheet	Obverse	Reverse
10¢	11-1/2" x 14-3/4"	20	ABC	NBC
15¢	11-1/2" x 12-1/2"	15	NBC	ABC
25¢	11-1/2" x 13-1/2"	15	NBC	ABC
50¢ (Lincoln)	11-1/2" x 14-1/2"	15	ABC	NBC

ABC - Printed by American Bank Note Co.

NBC - Printed by National Bank Note Co.

(Note that seals of all notes were printed by the Bureau of Engraving and Printing)

In January 1870, the 50¢ having been successfully counterfeited, a new note was issued (50¢ Stanton) having the back printed by American Bank Note Co. and obverse and seal by the Bureau on 9-1/4" x 15-3/4" ~~as~~ blue-end localized fiber paper with 16 subjects to the sheet.

In November 1871, it was decided to change the character of the paper (went to blue-end localized fiber) and new plates were made for the 10, 15 and 25¢ notes:

Note Value	Sheet Size	Subjects per sheet	Obverse	Reverse
10¢	7-1/2" x 16-3/4"	16	ABC	NBC
15¢	8-1/4" x 16-3/4"	16	NBC	ABC
25¢	8-3/4" x 16-3/4"	16	NBC	ABC

In June 1873, the 50¢ notes were again counterfeited and a new issue becoming necessary, the Secretary of the Treasury gave the printing of the new "backs" (50¢ Dexter) to the National Bank Note Co. — 50¢ backs, size 8-1/2" x 16-3/4", 14 subjects, and the faces and seals were again done by the Bureau.

Fifth Issue

In January 1874, a new contract was made with the Columbian Bank Note Co. for the printing of the backs of a new 10 and 25¢ note with the faces and seals by the Bureau as follows:

Note Value	Sheet Size	Subjects per sheet
10¢	7-1/2" x 15-3/4"	14
25¢	8" x 15-3/4"	14

(Since the report does not mention the 50¢ Crawford note of the fifth issue - back by Jos. Carpenter of Philadelphia, we must postulate that it was issued after the date of the report).

Note that any listings of 4th or 5th issue as being printed on "plain" paper are incorrect because testimony states that the absence of the distributed fibers was an indicator of a counterfeit note. The testimony further states that some counterfeiters tried to print the "fibers" on the note surface by simply scratching the printing plate.

We can further assume that notes having lavender or blue fibers distributed through the pulp used to make the paper are not a major variety but rather paper having some scrap from defective "localized fiber" paper mixed back in the pulp and thus are simply notes issued after January 1870 when the "localized fiber" paper was adopted for the 50¢ Stanton.

We should further revise our listings of the 4th issue to differentiate between "waterproofed" or "sized" and "unsized" notes. This difference can be detected by comparison of the "slick" feel of sized notes when compared to the "soft" feel of unsized notes.

The listings of proofs should also indicate that a too small 10¢ proof of the reverse was made by the Columbian Bank Note Co. A mistake was made in transmitting the size of the new note to the Columbian Bank Note Co. and the proof prepared was rejected by the Bureau since the Bureau had already engraved the face to a larger size. Mr. Wellstood of Columbian Bank Note testified that only a proof from the die was printed.

A corrected listing should be as follows:

ABC - Printed by American Bank Note Co., New York, New York
NBC - Printed by National Bank Note Co., New York, New York
CBC - Printed by Columbian Bank Note Co., Washington, D.C.
CAR - Printed by Jos. R. Carpenter Co., Philadelphia, Pa.
BUR - Printed by Bureau of Engraving & Printing, Washington, D.C.

1st Series - July 1869 First Issue date - all notes watermarked US (repetitive)
All paper having minute pink fibers distributed throughout

Note Value	Subjects/Sheet	Obverse	Reverse	Seal By
10¢	20	ABC	NBC	BUR
15¢	15	NBC	ABC	BUR
25¢	15	NBC	ABC	BUR
50¢ (Lincoln)	15	ABC	NBC	BUR

2nd Series - Watermark discontinued & all paper having minute pink fibers distributed throughout.

10¢	20	ABC	NBC	BUR
15¢	15	NBC	ABC	BUR
25¢	15	NBC	ABC	BUR
50¢ (Lincoln)	15	ABC	NBC	BUR

3rd Series - January 1870 First Issue date - paper having minute pink fiber distributed throughout and localized blue fiber on right end obverse.

50¢ (Stanton)	16	BUR	ABC	BUR
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4th Series - 1871 Issue Date - Waterproofing (sizing) compound applied to notes of 2nd and 3rd series above

10¢ No localized fiber	20	ABC	NBC	BUR
15¢ No localized fiber	15	NBC	ABC	BUR
25¢ No localized fiber	15	NBC	ABC	BUR
50¢ With localized fiber	16	BUR	ABC	BUR

5th Series - November 1871 Issue Date - Paper having localized blue fiber on right hand end of obverse plus minute pink fibers distributed through the paper. All paper coated with waterproofing (sizing) compound.

10¢	16	ABC	NBC	BUR
15¢	16	NBC	ABC	BUR
25¢	16	NBC	ABC	BUR

6th Series - July 1873 First Issue date - paper having localized blue fiber on right hand edge of reverse plus minute pink fibers distributed throughout the paper. All paper coated with waterproofing (sizing) compound.

50¢ (Dexter)	14	BUR	NBC	BUR
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Fifth Issue

July 1874 First Issue Date - Paper having localized blue fiber on right hand edge of reverse plus minute pink fiber distributed throughout the paper. All paper coated with waterproofing (sizing) compound.

10¢ See note 1	14	BUR	BBE	BUR
25¢ See note 1	14	BUR	CBC	BUR
50¢	14*	BUR	CAR	BUR

*Postulated (no definite proof)

Note 1 - No attempt has been made in this listing to differentiate red and green seal of long and short key varieties as this listing is based only on information contained in the testimony of Report #150 of the 43rd Congress, 2nd Session.

M. R. Friedman
July 2, 1965

Display Folders. Design includes exclusive cover sheet of 5 mil Mylar® archival polyester (see photo) for protection and visibility. Folder constructed of sturdy 20 point cream white Perma/Dur® base stock. High thread count linen tape and an acid-free adhesive are used to hinge folder; cover sheet is attached with 3M's 415 tape. Excellent for display or study of maps, protection of thin woven materials or temporary storage of unmatted prints. Price per package of 5 folders.

Cat. No.	Size	Wt.	1	5	20+
776-2012	10" x 12"	14 oz	\$15.25	\$14.10/pk	\$12.50/pk
776-2013	10" x 15"	1 lb 4 oz	18.25	16.05	15.10
776-2014	14" x 18"	1 lb 13 oz	26.25	24.35	22.95
776-2015	15" x 20"	2 lbs 8 oz	29.25	25.95	25.25
776-2021	20" x 30"	5 lbs	51.95	49.25	45.50
776-2022	22" x 28"	5 lbs	52.85	50.75	46.25
776-2023	30" x 40"	11 lbs	98.85	93.95	87.95

B. Perma/Dur® Map & Print Folders

These completely acid-free and lignin-free Map and Print Folders provide an excellent means of storing and protecting maps, prints, and broadsides. Manufactured from .010 cream white Perma/Dur® with a pH of approximately 8.5, reducing the possibility of paper discoloration and ink fading. Straight cut for safe, convenient storage. Flush folded and reinforced with acid-free tape for added protection. Special size requirements available. Price per package of 10 folders.

Cat. No.	Size	Wt.	1	5	10	25	50+
701-7046	18" x 24"	4 lbs	\$18.75	\$13.25/pk	\$12.95/pk	\$12.35/pk	\$11.95/pk
701-7047	20" x 24"	5 lbs	20.25	15.95	15.10	14.45	13.75
701-7048	20" x 30"	5 lbs	22.95	18.25	17.95	16.95	15.95
701-7049	24" x 36"	8 lb	32.75	31.85	30.75	28.95	27.95
701-7050	24" x 40"	9 lbs	34.75	33.90	32.75	30.85	28.25
701-7052	30" x 42"	12 lbs	30.50	29.85	29.15	27.50	25.90
701-7053	32" x 40"	13 lbs	31.75	31.25	29.85	28.15	27.25
701-7051	36" x 48"	15 lbs	37.85	37.25	35.95	34.10	31.85

Heavy Duty (.020 Light Tan Perma/Dur®) 5 Per Package

Cat. No.	Size	Wt.	1	2	4	10+
731-3040	30" x 40"	11 lbs	\$41.85	\$37.45/pk	\$35.50/pk	\$34.35/pk
*731-3648	36" x 48"	16 lbs	54.55	53.50	50.70	50.10



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C. "See Thru" Mylar® Map, Newspaper & Print Envelopes

These large envelopes offer an excellent approach to the practical archival storage of large maps, prints or broadsides. These envelopes offer archival storage while giving complete visibility to its contents. Made of 4 mil Mylar, with 3 edges sealed. Price per package of 5.

Cat.No.	Size	Wt.	1	5	10	50+
565-2769	11" x 17"	12 oz	\$11.60	\$11.15/pk	\$10.75/pk	\$10.05/pk
565-1721	17" x 21"	1 lb 7 oz	24.95	23.25	21.95	21.25
565-1824	18" x 24"	1 lb 11 oz	27.85	27.50	25.90	20.15
565-2777	24" x 36"	3 lbs 2 oz	46.95	40.35	33.15	31.75

D. Mylar Envelopes For Folded Maps & Timetables

Provide the maximum amount of protection possible for your maps or timetables with these crystal clear and sturdy 4 mil Mylar Envelopes. Mylar is universally accepted as the premier archival storage medium for: photographs, prints, letters, pamphlets, comics, baseball cards, and other odd collectibles. Now, you can provide the ultimate protection for your valuable pocket maps or timetables too. Sized perfectly for maps, timetables at 10" x 4-1/2" and sealed on three sides by our exclusive "thermo-welding" process for added strength and durability, these envelopes are sure to protect your valuable maps/timetables. Price per package of 10.

Cat. No.	Wt.	1	5	10	50+
565-1045	6 oz	\$9.10	\$7.95/pk	\$7.25/pk	\$6.75/pk

UNIVERSITY PRODUCTS, INC.



EPHEMERA STORAGE BAGS

Protect objects of historic or sentimental value in our safe, transparent polyethylene bags. They're great for comic books, baseball cards, old magazines, and more! 100 BAGS PER PACKAGE. Bag stiffeners are .020 TrueCore board. 25 PER PACKAGE.

BAGS (100/pkg.)					STIFFENERS (25/pkg.)		
Code	Description	Size	Mil	Price	Code	Size to Fit	Price
3117	Sheet Music	9 1/2" x 12 1/4"	3	\$ 8.50	5241	3117	\$6.80
3118	Sheet Music	10 1/2" x 14 1/4"	3	11.90	5242	3118	9.00
3119	Comic Book (Marvel)	7 1/4" x 10 1/4"	3	5.10	5243	3119	5.10
3120	Comic Book (New)	6 1/2" x 10 1/4"	3	5.00	5244	3120	5.00
3121	Magazine	8 1/2" x 11 1/4"	3	8.05	5245	3121	5.10
2690	Life Magazine	11 1/2" x 14 1/4"	2	10.50	5246	2690	8.05
3122	Newspaper	12" x 19"	2	10.00	5247	3122	16.30
3123	Newspaper (Oversize)	14 1/2" x 19"	2	11.50	5248	3123	20.40
3112	Stereocard	3 1/4" x 7 1/4"	2	3.45	—	—	—
3114	Postcard	3 1/4" x 5 1/4"	2	3.05	—	—	—
3101	Postcard (Large) and First Day Covers	4 1/4" x 6 1/4"	2	3.45	—	—	—
3102	Baseball Card (New)	2 1/4" x 3 1/4"	2	2.95	—	—	—
3103	Baseball Card (1950s)	2 1/4" x 3 1/4"	2	3.20	—	—	—
8246	Record Jacket (33 1/3)	12 1/2" x 12 1/2"	3	11.80	—	—	—

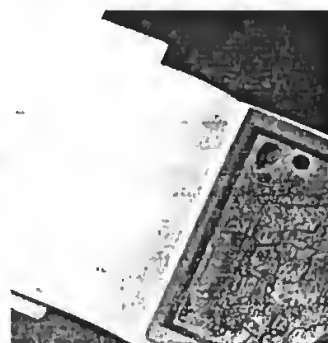
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Price/Pkg.			
Code	Size	1-2	3-9 10+
3301	11 1/2" x 14 1/4"	\$23.75	\$19.00 \$15.85
3302	16 1/2" x 20 1/4"	31.25	25.00 20.85
3303	20 1/2" x 24 1/4"	39.50	31.80 26.35



MAP FOLDERS

Old maps, large documents, and other paper or fabric items deteriorate very quickly if they're frequently handled. These folders will give them archival protection, and allow you to handle them safely. Made of TrueCore 133 Card Stock with Tyvek-reinforced seams.

5 FOLDERS PER PACKAGE

Price/Pkg.			
Code	Size	1-9	10+
2936	20" x 24"	\$10.50	\$ 8.40
2937	24" x 30"	12.00	9.60
2992	28" x 34"	15.00	12.00